

tubes, grafted upon those already in existence. This new mode of living sheltered, differing essentially from the former, gave origin to a new genus, *Amphievis*, of the family Pseudarkysiae.

In a recent dredging at some distance from the southern shore of the Bay of Biscay, upon a bottom of coarse sand, we found some specimens of *Amphievis*, that is to say organisms like those captured by the 'Talisman,' but differing from them in their envelope. The envelope, instead of consisting of *Globigerinae*, is formed by an assemblage of sand-grains, of small shells of mollusca or their débris, and a little mud. They also differ in having the sarcodes which envelopes the branched system much more condensed than in the specimens from our shores.

The most interesting discovery that we have made is that of a third state of the Pseudarkysiae. It is in the form of little pebbles, and with the same hardness, that this organism presents itself. The resemblance is so perfect that one is easily deceived. The organism impregnates itself with a paste which it forms with foreign corpuscles and sarcodesma, and thus forms a sort of cake, which it "ices," so to speak, by covering it with a composition of secretion and sarcodes, exactly analogous to that which forms the tests of the porcellaneous Foraminifera. The covering is just as smooth, polished, brilliant, and hard as the latter; but, instead of being white, it is coloured in several shades. The sarcodes which envelopes the branched system is strongly condensed. If we break one of these little false-pebbles the fracture is of the kind known as *greasy*. This new state therefore gives occasion to the establishment of the genus *Lithozoa*, and we believe that it may be divided into several species.—*Comptes Rendus*, July 27, 1885, p. 327.

Description of a new Crustacean allied to Homarus and Nephrops.

By SIDNEY I. SMITH.

Any additions to the small number of known types of existing Homaridae are of special interest on account of the relations of the group to the Astacidae and to several fossil forms; and for this reason it seems desirable to give a special notice of the following species recently taken in the Caribbean Sea by the Fish-Commission steamer 'Albatross.'

EUNEPHROPS, gen. nov.

The species for which this generic name is proposed agrees with *Homarus* and differs from *Nephrops* and *Nephropsis* in the number and arrangement of the branchiae, and in the evenly swollen branchial regions; it agrees with *Nephrops* and *Homarus* and differs from *Nephropsis* in possessing antennal scales and well-developed eyes; it agrees with *Nephropsis* and differs from *Homarus* and *Nephrops* in having very large antennal spines, and in being without any spine on the second segment of the peduncle of the antennæ; and

it agrees with *Nephrops* and differs from *Homarus* and *Nephropsis* in having slender and carinated chelæ.

Eunephrops Bairdii, sp. nov.

Female.—The carapax is nearly as broad as high, and the branchial regions and the dorsum, except in front, are evenly convex and rounded. The cervical suture is conspicuous and very deep, extends round beneath the narrow lateral lobe of the gastric region, and joins the middle of a conspicuous regularly semicircular suture, limiting the hepatic region below and behind. The inferior edge of the rostrum is sharp and slightly roughened, but not distinctly dentate. From the sides of the rostrum two low rounded carinæ extend back a little way upon the gastric region, and are armed each with two spines somewhat smaller than the lateral spines of the rostrum, while much further back, upon the posterior margin of the cervical suture, there is a pair of similar subdorsal spines much nearer together. The anterior margin projects on either side in a great vertically compressed dentiform spine, reaching in an acute point as far forward as the eyes, and recalling similar spines in some of the Crangonidæ. Just behind the base of the antennal spine there is a small spine on the hepatic region, and between this and the posterior subdorsal spine of the gastric region, and behind the orbit, there is a similar spine. The carapax is everywhere roughened with minute tubercles, between which the surface is beset with very short hairs.

The eyes, though not quite so large, are nearly like those of *Nephrops norvegicus*, being vertically compressed, reniform, and black.

The antennulæ are like those of *Nephrops norvegicus*. The general form and proportions of the bodies of the segments of the peduncle of the antennæ are almost exactly as in *Nephrops norvegicus*, but the second segment is evenly convex externally and without any trace of a tooth or spine at the base of the very small antennal scale, which is very little more than half as long as the fourth segment, about half as wide as long, oblong-ovate, with a minute tooth at the tip, and with the inner edge ciliated. The flagellum is considerably longer than the body of the animal, and very nearly as in *Nephrops norvegicus*.

The oral appendages agree very closely in every detail with those of *Nephrops norvegicus*, except that there is a well-developed podobranchia, fully as large as in *Homarus americanus*, at the base of the first gnathopod.

In the single specimen seen the right cheliped is in process of reproduction and very rudimentary. The left cheliped agrees in general form very closely with the more slender of the chelipeds of *Nephrops norvegicus*; the inferior and superior edges of the merus, though roughened with somewhat spiniform granules, bear only one real spine each, and that at the distal end; the spines of the carpus are slightly fewer, but arranged nearly as in *Nephrops norvegicus*;

the chela itself is very slightly broader than in *Nephrops norvegicus*, the spines of the carinæ are a little less prominent, though the carinæ are spinulose or minutely tuberculous nearly to the tips of the digits, and the spaces between the carinæ are thickly tuberculous, and not pubescent. The remaining peræopods are very nearly as in *Nephrops norvegicus*.

The pleon is in general very much like that of *Nephrops norvegicus*, but the whole dorsum is pubescent, and the second, third, and fourth somites have only an inconspicuous, transverse, dorsally interrupted, and densely pubescent sulcus in place of the much broader and conspicuous sulci upon all the somites of *Nephrops norvegicus*. The depressions on the bases of the pleura are deeper than in *Nephrops norvegicus*, and the inferior angles are more obtuse, and not distinctly hooked, as in that species. The second to the fifth pleopods are smaller and their lamelle much narrower than in the *Homarus americanus* or the male of *Nephrops norvegicus*.

[I have had no female *Nephrops* for comparison.]

Measurements in millimetres.

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|---|-------|
| Length from tip of rostrum to tip of telson | 142·0 |
| Length of carapax, including rostrum | 69·5 |
| Length of rostrum | 24·3 |
| Length of rostrum in front of spines | 13·0 |
| Breadth between tips of antennal spines | 21·5 |
| Greatest breadth, at branchial regions | 25·0 |
| Height of carapax | 26·0 |
| Length of eye-stalk and eye | 6·0 |
| Greatest diameter of eye | 7·0 |
| Length of antennal scale | 4·1 |
| Breadth of antennal scale | 2·0 |
| Length of left cheliped | 112·0 |
| Length of merus | 32·0 |
| Length of carpus | 22·0 |
| Length of chela | 54·0 |
| Breadth of chela | 12·5 |
| Length of dactylus | 24·0 |
| Length of second peræopod | 69·0 |
| Length of merus | 23·0 |
| Length of carpus | 10·5 |
| Length of chela | 18·5 |
| Breadth of chela | 3·0 |
| Length of dactylus | 6·0 |
| Length of third peræopod | 65·0 |
| Length of merus | 19·5 |
| Length of carpus | 9·6 |
| Length of chela | 20·5 |
| Breadth of chela | 2·8 |
| Length of dactylus | 6·0 |
| Length of fourth peræopod | 67·0 |
| Length of propodus | 15·6 |
| Length of dactylus | 8·7 |
| Length of fifth peræopod | 58·0 |
| Length of propodus | 15·0 |

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| Length of dactylus | 7·0 |
| Length of sixth somite of pleon..... | 13·0 |
| Length of telson | 16·0 |
| Breadth of telson..... | 13·3 |
| Length of inner lamella of uropod | 14·0 |
| Breadth of inner lamella of uropod | 13·3 |
| Length of outer lamella of uropod..... | 19·0 |
| Breadth of outer lamella of uropod | 14·0 |

Station 2143, March 23, 1884; Gulf of Darien; north latitude 9° 30' 45", west longitude 76° 25' 30"; 155 fathoms, green mud. One female (6939).—*Proc. United States Nat. Mus.* 1885, p. 167.

New Haven, Conn., April 29, 1885.

On a Crocodile-skull from the Tertiary Deposits of Eggenburg in Lower Austria. By FRANZ TOULA and JOHANN A. KAIL.

The skull described by the authors was obtained from a sandy deposit containing granite-blocks and rolled pebbles on the western slope of the Calvarienberg near Eggenburg. Remains of *Halitherium* were obtained from the same locality. The crocodile-skull was in fragments, which, however, have been fitted together, and show it to have been at least 73 centim. (about 30 inches) in length from the imperfect muzzle to the hinder margin of the parietals, while the greatest width is 35·5 centim. The bones of the roof of the skull are pretty well preserved; those of the under surface only in the fore part.

From a comparison of the specimen with various recent and fossil forms the authors conclude that it represents a new form intermediate between *Gavialis* and *Crocodilus*. As regards the total number of teeth (twenty) it would agree with the genus *Tomistoma*, S. Müll. (= *Rhynchosuchus*, Huxl.), but it differs from this in having five teeth in the intermaxillaries (arranged as in *Gavialis*), and in having the sixth upper tooth the largest, instead of the fifth as in *Tomistoma*. The teeth of the lower jaw fit into pits between those of the upper jaw, the extremity of the snout is not enlarged, and the suture of the intermaxillaries extends only to the third tooth of the supramaxillaries—characters indicating relationship with *Tomistoma*, while the raised orbital margins remind one of *Gavialis*. *Mecistops* has only seventeen teeth, and is further distinguished by the enlargement of the snout at the end and in the region of the fifth upper tooth; while *Gavialis* has from twenty-seven to twenty-eight teeth directed outwards, and differs in other characters. The authors conclude that their specimen is to be regarded as a form intermediate between *Gavialis* and *Crocodilus*—most nearly related to the genus *Tomistoma*, which is now living in the rivers of Borneo and North Australia—which they propose to name *Crocodilus (Gavialosuchus, n. gen.) eggenburgensis*.—*Anzeiger d. k. Akad. d. Wiss. in Wien*, May 7, 1885, p. 107.